

# Teacher Educators' Views of Student Learning and Experiences Offered to Support Learning

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## Abstract

The objective of my study was to find out teacher educators' views of student teachers in developing nations using Zimbabwe as a case, what they learn and changes that occur. The study was interpretive in nature and used qualitative research methodology. Research participants were teacher educators who had left their countries to either study or live in diaspora after the beginning of the new millennium. Data was collected using face-to-face, telephone and e-mail interviewing with participants. Data collected using 1 telephone and 2 e-mail interviews are presented. Qualitative data analysis was used where second generation activity theory was used to define *a priori* codes. The initial codes were refined and more codes emerging from the data added to create a final template to interpret the findings. Data analysis revealed 6 themes namely: history and background of student teachers; perceived professional identities; interplay between theory and practice; 'mediating' tools; contradictions; changes in professional knowledge and skills; and improving current practices in teacher education. Teacher educators and their students chose teaching because some had failed to meet the grade to pursue careers of interest, and others thought this would enable them to eventually negotiate their way into areas of interest. Another finding was that student teachers tend to assume different identities: student, teacher, expert and parent. Student teachers participated in various learning activities namely; lectures, tutorials, micro-teaching, observation, live teaching, mentoring and teaching practice supervision. They valued learning subject matter most and tended to identify themselves with subject specialism. The study revealed that the dormant interplay between theory and practice is the applicative notion and student teachers tend to see theory as divorced from practice. Participants described professional growth in student teachers in terms of learning of secondary school students, critical reflection, and professionalism. The study concluded that while participants seem to be agreed that learning to teach occurs in different settings there was no mention of deliberate efforts to use the practices, objects and tools to enhance expansive learning.

**Keywords:** activity theory, teacher education, reflective practice

## 1. Introduction

While the place and value of key categories of knowledge of teaching are not contested (Darling-Hammond, 2006), policy makers and practitioners do not agree on what and where student teachers learn. First, student teachers need knowledge of learners, how they learn and develop, and language development and all this demands a sound understanding of subject matter. Second, they need knowledge of curriculum content and goals, subject matter, and skills (disciplinary demands, student needs, and social purposes of education). Third, student teachers need knowledge of and skills for teaching, pedagogical content knowledge, teaching diverse learners, assessment and how to construct and manage a productive classroom. Literature shows that teachers' subject matter knowledge is linked with effective teaching (Fajet, et al., 2005; Darling-Hammond, 2000b; Pring 2000), and others think that what is most important is teachers' knowledge of the processes of teaching (Monk, 1994). Learning to teach comprises three key components namely subject matter and pedagogical knowledge, theoretical foundations of education and school experience (Mudavanhu, 2015a). However, there is no agreement among teacher education providers on how much time to allocate each component and location of where learning should occur.

Student teachers learn in many different settings whose practices are aimed at achieving different and often contradictory objectives. It is interesting to ask what kind of resolution is possible here and how student teachers meet the competing expectations; whether or not student teachers see these as opportunities for dialectical interaction between idealised practice learnt at university and real practice encountered in school, and capable of encouraging professional development occurring in different contexts (Smith, Brisard, and Menter, 2006). The tendency by student

teachers to see the university courses as essentially theoretical and the school-based programme as practical unnecessarily complicates matters; neither is “practice ... thoughtless behaviour which can exist separate from theory”, Carr and Kemmis (1986) nor theories bodies of knowledge that can be generated out of a practical vacuum. Perhaps it can be more productive for student teachers to see the theory-practice relationship as dialectical and not applicative (Usher & Bryant, 1987).

Student teachers are motivated by various factors to join teaching, and knowing these motives is important (Mudavanhu, 2015b). Motivated and committed teachers ensure quality education (Richardson & Watt, 2005). Studies to establish what attracted people to teaching has been conducted the world over; in the United Kingdom e.g. Younger, Brindley, Pedder, & Hagger (2004); in America e.g. Cochran-Smith & Zeichner (2005); in Europe e.g. Bruinsma & Canrinus, 2012), and Asia e.g. (Chan, 2004). Student teachers’ motives, identities and learning experiences are shaped by their personal histories (Mudavanhu, 2015b). One assumption of this study was that understanding motives can help to narrow the gap between personal biographies and expectations in teacher education (Mudavanhu, 2015b). Teacher educators’ perceptions about their students can provide insights into motives and personal biographies.

Cognisant of the view that teacher education matters (Darling-Hammond, 2000a), observing and reporting changes can be contested. Some research studies have reported changes in attitudes, knowledge and skills (Guskey, 2000), change in professional competence (Stenhouse, 1975), and changes in student characteristics between entry and exist (Chisaka & Mavhundutse, 2006). Others have reported a reciprocal regulatory feedback between knowledge growth and learning through practice (activity), that is gaining knowledge affects performance (action), and action changes our knowledge (Jonassen & Rohrer-Murphy, 1999; Fish, 1989). Teacher educators and student teachers may perceive changes and why differently. Darling-Hammond (2000a) is of the opinion that the weight of substantial evidence indicates that teachers who have more preparation for teaching are more confident and successful with students than those who have had little or none. This means teacher education matters and changes participants. My study sought teacher educators’ views of changes that they saw in their students as they progressed from entry through exit.

## 2. Research Problem and Questions

The objective of my study was to find out teacher educators’ views of student teachers, what they learn, where they learn and changes that occur to student teachers. The study was guided by the following research questions

- a. What are the teacher educators’ views of the background and identity of student teachers?
- b. What are the teacher educators’ views of what and where student teachers learn?
- c. What are the teacher educators’ views of changes that occur in student teachers during training?

## 3. Theoretical Frameworks

The study makes use of socio-cultural theory (SCT) to understand how students construct new knowledge with others as they participate in communities of learning (Lave & Wenger, 1991). The student teacher and teacher educator are the key actors of such communities of learning. The student could be seen as an active learner responsible for thinking, explaining and questioning self and others. The teacher educator on the other hand could be seen as responsible for modelling appropriate learning and teaching processes as well as to provide scaffolding to student teachers. The teacher educators tend to present knowledge in settings and applications that would normally involve that knowledge, for example microteaching, and that provide student teachers with opportunities for social interaction and collaboration, e.g. school experience.

From a socio-cultural perspective, e.g. Vygotsky, student teachers learn through social interactions and successful learning occurs when students transform public knowledge into tacit knowledge (or personal values). Vygotsky’s zone of proximal development (ZPD) can be used to explain how learning leads to development in social settings. For Vygotsky modelling by the more able other (e.g. mentor teacher) and being able to do tasks with their help is followed by gradually shifting of responsibility to the student teacher. Socio-cultural perspective supports the view that student teachers can develop higher forms of mental activity using mediating tools such as human interaction and symbolic tools to learn. This study assumed that student teachers’ professional development is shaped by practices of interaction and the tools in given settings. However, student teachers may encounter different resources and learning opportunities in different settings.

While researchers are not agreed on how to explain why pre-service teachers do not adopt new ways of teaching (Zevenbergen, 2006) learnt at university, three issues recur in literature; personal biographies, interplay between theory and practice, and differences in expectations between learning in the university and school settings. For this reason, researchers need to consider the concepts field and habitus (Bourdieu, 1979) as structured system of social relations at micro and macro levels that influence student teachers’ decisions. Habitus is a system of durable and transposable dispositions which predispose participants to act, think and behave in particular ways (Bourdieu, 1979). Student

teachers spend 12-13 years in school during which they develop a primary teaching habitus, and this needs to be reconstituted into a secondary habitus aligned with the experiences of teacher preparation (Zevenbergen, 2006). The primary teaching habitus tends to act as a filter when student teachers who have been learning educational theory were given opportunity to implement new ideas in the classroom.

The interplay between theory and practice can also be examined using reflective practice. John Dewey (1933) is often identified as the originator of reflective practice though he coined it reflective thinking. Most credit goes to Donald Schön (1983; 1987) through notions of reflection-in-action and reflection-on-action. Ottesen (2007) described reflective practice as action embedded in social activities. The reflective cycle is made up of stages of planning, acting, evaluating and re-thinking. Each stage of the reflective cycle is influenced by notions of theory, context and values (Haggarty and Postlethwaite, 2003). Reflective practice offers opportunity to depart from the applicative relationship of theory and practice, to a new dialectic stance where implicit theories are seen as giving meaning to actions performed by a teacher and equally important presume that the teacher's actions give meaning to theory (van Manen, 1985).

Students' participation in learning communities can also be examined using activity systems. Activity theory is a "philosophical framework for studying different forms of human praxis as developmental processes both individual and social levels interlinked at the same time", Jonassen and Rohrer-Murphy (1999, p. 62). A model of the structure of activity system was formulated by Engeström (1987). It includes the interacting components of subject, object, tools, division of labour, community, rules, and outcome. This study adopts the second generation activity theory model (Engeström, 2001) conscious that learning to teach was occurring in two settings. However, interaction of activity systems was not evident in data gathered to warrant adoption of third generation activity theory. The transfer of ideas across activity systems is often problematic because different settings have different goals, expectations and ways of working (different cultures). The transfer of ideas, or boundary crossing, offers opportunities for change referred to as expansive learning.

#### 4. Research Methodology

The study was interpretive in nature and used qualitative research methodology where researcher contemplates the meaning *others* make of experiences conscious that the claims are subjective and can never be true for more than the given situation. According to Van der Mescht's (2004) research participants' 'reality' is not directly accessible to the researcher and therefore focus is "on the 'dialogue' of individuals with their contexts, the dialectical organisation of experiencing-behaving subject and physical social world which essentially defines phenomenon in question". It was assumed that participants were able to describe in detail their perceptions of teacher education phenomenon. The researcher had experience of teacher education, from where he had come to know some of the participants. This historicity influenced interpretation of participants' perceptions. Researchers using qualitative research methodology tend to collect and analyse data in ways that engage historicity and prejudice (Lavery, 2003). They use "unstructured interviews in which only open ended questions, if any, are asked" and make every effort to ensure that "the themes pinpointed in the data do, in fact, arise out of the data and are not imposed on them" (Crotty, 2003, p. 83).

My target population was teacher educators from developing nations who had relocated to developed nations after the year 2000. Convenient sampling was used. Participants were selected using several criteria. I approached participants whom I knew to have been secondary teachers in Zimbabwe or their own countries prior to moving into diaspora, who had experience as either mentors or lecturers of student teachers. These were people whom I knew and with whom I was in constant communication. They were my friends, and colleagues. One other important criterion was that each participant had access to Internet and could communicate with me by e-mail, telephone or face-to-face during the study. All participants were Zimbabweans, except one who was also a student at University of Exeter and a teacher educator in her own country. I used an introductory letter to explain the purposes of my study and then sought consent to participate. Participants were free to decide to discontinue at any time of the study. They were assured confidentiality and anonymity.

There were ten participants located in four continents: Africa (2), America (1), Europe (5), and Asia (1). Five participants were either university lecturers or had previously been at the time they left Zimbabwe. The other four participants were qualified teachers who at some point in their teaching career had acted as mentors. Only 3 participants will be referred to in this paper and these were identified as TE1, TE6, and TE10.

TE1 had taught English at secondary school for 4 years before becoming a teaching assistant. TE1 assisted teaching literature in education courses. She came to England to study for a PhD, sponsored by her university. At the time of the study she had been away from her place of employment for 3 years. She opted to be interviewed using e-mail.

TE6 was aged 46. Before coming to England he was a university lecturer, teaching mathematics to student teachers. Previously he had taught mathematics at A-Level for 10 years. He had studied abroad to obtain a degree to teach mathematics. He studied MMaths at a university in Zimbabwe. Since coming to England TE6 has been employed as a

supply teacher and part-time tutor of mathematics. He was working towards QTS, at a local university, during the time the interview was conducted. TE6 preferred telephone interviewing.

TE10 was aged 45. He trained as a secondary school teacher after completing A-Levels. He taught for a couple of years and then studied B.Ed. Mathematics Education, and later M.Sc.Ed. Mathematics Education. TE10 became a teacher educator and when a new university was set up he was one of the pioneer teacher educators for secondary science teachers. When the study was conducted TE10 had a PhD in Education and was working as a teacher educator.

Researcher used qualitative data analysis and this meant using second generation activity theory to define *a priori* codes. The initial codes were refined and more codes emerging from the data added to create a final template to interpret the findings.

## 5. Research Findings

Data analysis revealed 6 themes namely: history and background of student teachers; perceived professional identities; interplay between theory and practice; 'mediating' tools; contradictions; changes in professional knowledge and skills; and improving current practices in teacher education.

### 5.1 History and Background of Student Teachers

The teacher educators who participated in the study seem to share the same backgrounds as their own students. They tell stories of becoming teacher educators by chance, and/or as a *stop gap* measure waiting for opportunities to arise for better things. One example is TE1 who paints a picture that she was forced to become a teacher educator. Her interest was to study for a PhD abroad. She could not do so without getting funding from a university, and therefore was "*roped in as a tutor ... while waiting for (her) time*" to be granted study leave. She reported that she had taught English Literature at secondary school for 4 years before becoming a teacher educator. In her job as a tutor TE1 assisted teaching literature in education courses.

TE1 and her in-service students shared some similarities: both had been teachers of English before joining the university. Unlike her students TE1 already held a first degree and a second degree in education. TE1 wanted to study PhD in Education to become an academic/researcher and learning *theory* was essential in meeting requirements of her job as teacher educator. The in-service student teachers held "*various levels of experience teaching English in schools*". They possessed "*teaching qualifications from teachers' training colleges*"; certificates and diplomas in education. TE1's students wanted to learn *theory* in order to be competent to teach all forms at secondary school and increase their own chances for promotion, like following same route as TE1.

Some participants joined teaching because of passion.

*Well ... I have always ... you know ... had a dream, a vision of becoming a teacher long before I become one. Even when playing enjoyed acting as a teacher. It was something I dreamt as I did my secondary education. To me it was a 'dream come true'. [TE6].*

In-service students were unique. Unlike conventional students, the in-service students participated in a "*crush programme*", "*a shortened version of the normal programme*". According to TE1 there was need to produce teachers who could teach Literature of English quickly to meet teacher shortage in schools. In-service students had relevant work experience, and on this basis their teaching practice was reduced from 12 weeks to 6. This reduction in length of teaching practice was comparable to 6-8 weeks in Zimbabwe.

Teacher educators believe that their institutions enrol students of mixed backgrounds in terms of abilities and work experience. TE10 is of the view that students have a range of abilities, sometimes to the disadvantage of the more able.

*TE attracted students from all backgrounds; you know the rural background etc, generally it attracted students from all backgrounds... By and large they were average performers, though occasionally we had a few high performers. We were not able to attract high performers. Those who had done well at A-level preferred other degree programmes and only opted for the teaching degree as second or third choice... There are some who have a calling. Some are genuinely motivated. Others use it as a stepping stone. To begin with teaching is not a high paying job. Some take up teacher training to fill up the gap in their search for a better paying job. [TE6].*

Most candidates take up teaching career as a last resort if not a stepping stone to better careers. However TE6 believes that the quality of teacher can only be improved by putting into place mechanisms that attract the best candidates.

*Yes, if we are to achieve high degree of quality teaching. We need students of the right calibre, preferably high quality. We want to make sure that we get and produce teachers of high quality. [TE6].*

Student teachers tend to have mixed backgrounds: some were described as ill-prepared, others had ~~possess~~ good A-Level passes (subject content knowledge), and there were others who had teaching (work) experience. Student

teachers were all adults and in terms of age 18 years or older. Teacher educators were all experienced qualified teachers.

### 5.2 Perceived Professional Identities of Student Teachers

Participants like TE6 provide an insight into their perceived professional identities through how they describe their jobs.

*My job was to teach mathematics content. Here and there I made reference to teaching A-Level classes in tutorials. My aim was to give them subject matter. [TE6].*

*I think a subject specialist like me as a Mathematician must team up with an educational theory lecturer and supervise the student. I would then help the student with subject matter knowledge and subject specific pedagogy while others would look into general pedagogy and classroom management issues. [TE6].*

Some participants perceive teachers as *in loco parentis* of children, and therefore student teachers must be groomed to behave in exemplary ways in order to act as role models.

*As custodians of learners, student teachers are expected to be guided by a strict code of conduct that enables them to be dependable, honest, presentable and firm and fair on learners. [TE10].*

There are instances participants viewed student teachers as experts who could be assigned full responsibilities of classes. The student teachers often acted as relief teachers during teaching practice. Student teachers tend to assume different identities: as practitioners *in loco parentis*, at other times as students learning to teach, and often treated as experts and experienced teachers during teaching practice.

### 5.3 Perceived Interplay between Theory and Practice

Participants were asked to define teacher education. One participant defined teacher education as ‘teacher training’ which could be interpreted to suggest a ‘deficit model’ of teacher education. The description given by TE10 implies that ‘theory’ informs ‘practice’. TE10 perceives TE as means to help student teachers to carry out the jobs of teaching (to practise teaching) and believes that such abilities are guided by ‘professional insights’ (by theory). Student teachers need education (*theory*), and once they have been provided with this, they should be able to teach (*practice*) effectively.

*Teacher education is the education provided to teachers to enable them to perform the duties of teaching informed by professional insights that facilitate effective learning. [TE10].*

Teaching tends to be viewed as telling.

*Usually we lecture. For example we present a theorem and show how to apply the theorem. In a tutorial we wanted to see how we can apply the theoretical stuff covered in the theoretical lecture (what is the theorem, how to use the theorem etc). There were lots and broader student-lecturer interactions. Students could ask whatever they wanted to ask. Students were asked to solve problems where they would apply the theorem. [TE6].*

While TE6 agrees with the description given by TE10 and the tendency to view teaching as telling, he reveals that learning to teach is a complex activity.

*Teaching is an art. It involves much more than content. Yes you have to get the content right. But it is also important to have the ability to deliver and be knowledgeable about all other learning factors like social, psychological and management. Teaching goes beyond mathematics, the content of instruction. [TE6].*

When participants were asked to describe what they saw as the interplay between *theory* and *practice*, the applicative notion was evident in the expressions ‘theory needed for practice’ and ‘putting theory into practice’. Some participants perceived school experience as an opportunity to put *theory-into-practice*. To them students learn at university and demonstrate what they have learnt at school and they believe this to be the trend the world over. When student teachers fail to use learner centred methods, it is because they do not understand what they learn at university. TE10 says:

*In the ‘school experience’ setting student teachers are expected to put into practice the content and pedagogical knowledge that they learn during the theoretical part of teacher education course. ...they are expected to implement learner centred teaching methods which promote learner active engagements. [TE10].*

Some participants perceive classroom teaching as a form of experiential learning, sometimes contradicting their ideas of ‘putting theory into practice’. He believes that student teachers learn “during the enactment of teaching in the classroom”. He also seems to imply that student teachers are given opportunity to experiment with their ideas.

*Learning to teach occurs during the enactment of teaching in the classroom. When enacting teaching, student teachers have opportunities to implement their conceptions of teaching, assess the effectiveness of their instructional conceptions in the context of the learning environment, evaluate the strengths and weaknesses of their implementation strategies and identify developmental insights. Developmental insights enable student teachers to think of implementation strategies that enable reduction of weaknesses noticed in a taught lesson and strengthening*

*the merits of the lesson. [TE10].*

Student teachers participated in various learning activities. These included lectures, tutorials, micro-teaching, observation, live teaching, mentoring and supervision. While the dormant interplay between theory and practice the applicative notion, school experience provided student teachers with opportunities to reflect and think deeply about how to reach out to learners.

*In a tutorial the student teacher is learning subject matter. In the school the student teacher learns to teach that subject matter to secondary school students... Definitely there is interaction. It is good enough to know the content. But this does not mean you are able to teach the same content. It is important to understand the student whom you teach: who are they, what are their interests, what learning styles do they prefer. [TE6].*

It appears practice is seen as the application of theory, often expressed as putting theory into practice, which I label as an applicative relationship. Some participants were of the opinion that theory influences practice as much as practice shapes theory—a dialectic relationship. Sometimes practice was seen as experiential learning, where student teachers learn through experience and had liberty to learn through trial and error. Other participants saw practice as a way to develop critical reflection of theory. One is left with a feeling that there was a complex relationship between theory and practice.

#### 5.4 'Mediating' Tools

Some participants understood 'tools' to mean teaching and learning technology/media. TE10 sees student teachers as people, who use tools to help their students to understand content taught, and it is not clear whether he sees the STs as learners who make use of 'mediating' tools.

*Physical tools commonly used in the development of mathematics content that student teachers are encouraged to use are ICT tools, manipulatives etc. Whilst there are ready made ICT that can facilitate learner engagement and creation of mathematical concepts, student teachers are encouraged to be creative and design activities that enable learners to create their mathematical conjectures. [TE10].*

The concept of 'mediating' tools was not easily understood by participants as initially envisioned by researcher. This is evident in the response given by TE6.

*What are tools? Do you mean resources like use of laptop, power-point, different forms of ICTs, different methods?... What we used in the teaching process like methods: discovery, drill and practice, problem solving. Do these all fall into categories of tools? [TE6].*

Some participants believed that the way people conceptualized 'tools' shaped how they used the tools.

*Yes. The way an individual selects tools and uses these affects the whole learning process. For example I have found ICTs useful for students to understand abstract concepts in Mathematics. Students are different: some are audio, visual and others kinesthetic and ICTs cater for all these different groups of learners. So tools enable you to cater for individual differences. This way it ICTs maximize learning of individuals. [TE6].*

From the interviews it was not clear whether participants understood mediating tools as stimuli for 'reflection', 'discussion' and 'focus'. However, despite doubts in comprehending the concept of 'mediating' tools participants were conscious of the fact that the way an individual uses 'mediating' tools has an impact on learning that occurs.

#### 5.5 Contradictions

One of the activities through which student teachers learn is the tutorial. TE1 described herself as a tutor, whose job was to extend students' learning. She supervised discussions, exercises and tasks arising from lectures and assignments. Another activity through which student teachers learn is simulated teaching. Such an activity could be micro-teaching or peer-teaching. TE1 supervised students during simulated teaching, "as specified in regulations". She awarded grades, thus the learning activity was also used as an assessment activity.

Some participants' responses show contradictions between *safe, supportive* learning in micro/peer-teaching and *risky, deep-end* classroom teaching. TE1 would prefer 'learning to practice in practice' (real classroom teaching) to micro-teaching. She contradicts learning to teach using micro-teaching (MT) and learning from teaching practice (TP) with work of qualified teachers. Micro-teaching and peer-teaching simulate real life teaching and provide a safe learning environment, where student teachers can make mistakes aware that such errors do not have permanent effect on secondary school students. Micro-teaching is safe because fellow student teachers are cooperative and prepared to support their colleague. TP supported by subject teachers also provides a *safe, supportive* environment to learn the job of teaching, aware that if things go wrong there is an experienced and competent teacher to intervene.

TE1 believes that micro-teaching, despite being artificial representation of the secondary classroom, provides

opportunity for students with a feeling of teaching. She said that student teachers were sometimes disappointed to find out that when they taught actual classes what they thought would happen as encountered in micro-teaching did not occur. At TE1's university micro-teaching was compulsory. TE1 believes that micro-teaching was important because STs used it to prepare for teaching practice. The STs used comments from lecturers to improve their lesson preparation and teaching skills. There is evidence in literature to support TE1. Although it is helpful to experience classrooms and analyse the materials and practices of teaching, it is quite another thing to put ideals into action (Darling-Hammond, 2006, p. 308).

One of the activities through which student teachers learn is supervision of teaching practice. The same activity was also used as a 'demonstration of competence', contradicting the initial idea to use it for learning purposes. TE1 visited schools as "specified in her job description" to observe and assess students on teaching practice. In post observation conferences she discussed strengths and weaknesses of the students' teaching. TE1 did not mention receiving any training in supervising teaching practice. Her own experience of teaching English at secondary school helped her to differentiate good performance from inadequate performance.

TE1 said that student teachers took over classes of teachers, teaching their subjects of specialism. The teachers were "required" in terms of the working relationship between university and school, to help the trainees, observe lessons and write reports. TE1 reports that university uses reports written by subject teachers to determine final grade of STs. However, the university reserved the discretion to use or not to use the teachers' comments. University lecturers interviewed other teachers in the school to find out what they thought about student teachers' professional conduct in general. On the basis of such comments, lecturers would decide to pass or fail the student teachers.

It appears the participants believed it was necessary for student teachers to learn in different settings like university and school. However, the participants felt that the agenda of *cutting costs* denied students opportunity to learn from practice in schools. Participants believed that deployment of student teachers during teaching practice was determined by need for cutting costs to the university and not necessarily learning needs of student teachers. Students were deployed to schools nearest to the university. TE1 reported that

*Student teachers were deployed to schools within easy reach to cut costs, reduce time for travelling to and fro, and to minimize fatigue of teacher educators. Student teachers manned classes full time for the whole duration of teaching practice. [TE1].*

It appears participants view the university-school divide as separation of theory and practice. There is evidence to suggest that student teachers were assigned full teaching load the same way as qualified teachers against the spirit of learning through observation. Some participants viewed teaching practice as demonstration of teaching competence and not opportunity to learn from practice.

### 5.6 Changes in Professional Growth

According to some participants, changes in professional growth were difficult to observe in student teachers. However, conversations revealed student teachers' changes in professionalism.

*Yes, there were changes. First years were enthusiastic and wanted to learn a lot. This was the case towards the end of the programme. Senior students showed maturity in terms of high quality work and ability to make decisions about own learning. There was a gradual change sometimes positive and also negative. In general I found the quality of work getting better and better... Firstly it was change in performance and participation seen in tutorials. You would also see attendance, greater involvement, punctuality, general enthusiasm and desire to do better. [TE6].*

Some participants believe that the outcome of learning to teach is competence to bring about secondary students' learning. For example, TE10 believes that the outcome of TE is secondary students' learning or learner achievement.

Other participants believe that student teachers show changes in their reflection and professionalism, although changes in the later are difficult to observe as stated by TE10:

*Most visible changes exist in their reflections of lessons that tend to move from technical reflection, to practical reflection and finally critical reflection. Other changes such as professionalism are difficult to notice because they are implicit rather than explicit. [TE10].*

Participants believe that the student teachers who develop critical reflection are able to self-evaluate and understand the link between theory and practice. For example, TE10 expects some student teachers to transform and become "critically reflective" individuals.

*A critically reflective student teacher who notices one's strengths and weaknesses may notice the interaction between theory and practice. An effective interaction between theory and practice may enable reduction of the gap between enacted and espoused teaching practice. [TE10].*

Participants described professional growth in student teachers in terms of learning of secondary school students, critical reflection, and professionalism.

### 5.7 Way Forward-improving Current Practices in TE

Participants talked about the place of research in improving current practices in teacher education. Some participants believe that one way to determine what is good about TE is to conduct evaluations of inputs, processes, outputs and outcomes.

*Different programs and models differ from one teacher education institute to another. Neither of these models/programs can be considered good/bad but their evaluations require thoughtful assessment of out-puts, quality of teachers and effectiveness of learner learning. [TE10].*

Some participants believe that it is not always the case that change is needed and strongly recommend making changes informed by research. They believe that research in TE should inform how the changes can be done. It is not clear whether the participants were thinking of research in TE to create new knowledge and use that as basis for improvement, or researching organizational change or both. As an example TE10 says

*Change for the sake of change can be done at impulse. The button line is to assess weak points and conduct research on how the changes can be done. [TE10].*

Participants believe that one area where change can be introduced is the way time is allocated to different components of TE, for example, increasing amount of time for teaching practice. TE10 refers to literature in support of the need to increase teaching practice time, based on the fact that the core business of a teacher is teaching, not the *theory of teaching*.

*For instance there is no consensus on the period that interns should spend on teaching practice. MacCulloch (1996) argues that  $\frac{3}{4}$  of teacher education should be spent on TP. This claim is informed by the view that the core business of a teacher is teaching. In order to teach well teachers need to engage in teaching not on the theory of teaching. [TE10].*

There seems to be no agreed position of how much time should be allocated to teaching practice. TE10 uses literature to show that learning to teach is more complex than teaching practice, and on this basis adequate research is required to inform change decisions.

*Other scholars such as Shulman (1987), Even (2005) etc argue that teaching is a complex activity that is not determined by a set of plausible teaching techniques. It involves responding to learners' social, emotional and cognitive demands; structuring content to suit the cognitive level of learners and responding to a host of classroom situations in order to offer effective teaching. So changing any aspect of teacher education requires adequate research to inform and justify the changes. [TE10].*

TE1 believes student teachers should be given opportunity to spend more time in schools than currently offered. Student teachers were likely to get a “*full picture of realities of the teaching profession*”. Student teachers need time to talk about the disappointments likely to be encountered. TE1 believes that trainees were not prepared to face the frustrations and disappointments in the teaching profession.

Further, TE1 suggests changing teaching practice in two other ways. She believes that “*it is wrongly placed at the end of the teacher education programme*” and should be staggered throughout the programme. She also believes that the focus of teaching practice should be changed to encourage learning by observation (of teachers and learners), as well as discussions between trainees and teachers, and secondary school students.

TE1 believed that there were too few schools in her country for school going age students. As such classes were too large for child-centred teaching. If classes were small student teachers would be able to maintain classroom discipline. They will have plenty time for lesson preparation and be free to think deeply about their job. TE1 believes that schools, by hiring more non-teaching staff to take over non-core duties, should increase teacher motivation.

Some participants believed that things which could be done differently must be guided by institutional goals and could include selection of prospective students, and changing the courses. TE10 says

*As regards programs, recruitment of interns, content, professional courses etc. (Changing these) demands ... priorities and institutional goals and cannot have a universal suggestion. [TE10].*

Participants believed that the national goals of opening opportunities to previously disadvantaged groups of people, racial integration, and using education as a tool for economic development has put pressure on universities to focus on high pass rate at the expense of increased opportunities to learn to teach. There appears to be a shortage of teachers in the country and region as a whole. The net effect seems to be negative on the quality of TE. TE programmes on offer are heavily



embedded with the historical past despite the fact that the calibre of the student teacher has changed over the years. For example, TE10:

*Students influence the teacher education courses that we offer in order to have many of them pass the course in particular the racial, economic, regional and political backgrounds of students influence teacher education practices. The imbalances created by apartheid in the provision of resources had different school systems produce different calibres of students. [TE10].*

Documentary evidence shows how TE1's university introduced structural changes between 1975 and 2002 in response to changes in market and nature of students enrolled. Change is ongoing in response to needs of students, schools and the nation e.g. *"learning by distance and short courses"*.

## 6. Discussion

### 6.1 History and Background of Student Teachers

One key issue emerging from teacher educators' perceptions of the history and background of student teachers is that most teacher candidates join teaching because of limited choices to pursue careers of interest. The finding that teaching fails to attract high flyers is not unique to developing nations though reasons for that may be different in developed nations. Programmes like 'Teach for America' (<https://www.teachforamerica.org>) and 'Teach First' (<https://www.teachfirst.org.uk>) have been put in place in an attempt to attract hard working and ambitious candidates to teach in low income communities. Research studies on motives in United Kingdom e.g. Younger, Brindley, Pedder, & Hagger (2004); in America e.g. Cochran-Smith & Zeichner (2005), in Europe e.g. Bruinsma & Canrinus, (2012), and Asia e.g. (Chan, 2004); are aimed at finding ways to attract motivated and committed teacher candidates.

The study revealed that some students joined teacher education with some working experience while others did not. Teacher educators believed that student teachers with some teaching experience see the relevance of learning educational theory to be effective teachers, and those without such experience cannot understand why learning educational theory matters. Teachers' prior experience, knowledge and beliefs factor into teacher learning: what teachers bring to the process of learning to teach affects what they learn (Zevenbergen, 2006). While personal and professional histories are important factors to consider when researching professional development of teachers (Wilson & Berne, 1999), my study did not reveal that student teachers' personal histories were important factors to consider when structuring their training programmes.

### 6.2 Professional Identities of Student Teachers

The study revealed that teacher educators believe that individuals who trained as teachers did so because they had failed to meet the grade to pursue other careers, but once they enrolled as student teachers the same individuals no longer saw themselves as people who did not do well at A-Level. The study revealed that teacher educators believe that student teachers saw themselves as scientists and subject matter specialists, an identity they had always considered to be more superior to teacher identity. Such identities shaped student teachers' learning by defining what is important in their work, and the tasks that they find meaningful (Vähäsantanen et al., 2008). Teacher educators believed that the tendency to identify oneself as scientists or mathematicians helped student teachers to appreciate the importance of subject matter knowledge to the teaching job. The study revealed that teacher educators believed that student teachers did not like learning education courses because to these student teachers all they needed to be effective teachers was knowing their subject of specialism – what could be described as "the apparent ease of teaching to the non-initiated" (Darling-Hammond, 2006, p. 2). The notion of professionalism implies that there is knowledge and skills short of which one cannot belong to the community of teachers, and such expertise is inherent in the range of things teachers need to know (Darling-Hammond, 2006). By learning educational theory student teachers developed the knowledge and skills that enabled them as professionals "to make wise and principled decisions on complex moral and evaluative issues", (Carr, 1992, p. 247).

The study revealed that teacher educators believed that student teachers acted as experts and relief teachers when they were on school attachment. This finding is unique to African countries where there is a high shortage of teachers. The purpose of going on school attachment was for student teachers to learn from qualified and experienced teachers through observation. John Dewey has argued that when practical teaching is seen as apprenticeship of observation the tendency is for student teachers to focus on gaining working command of the necessary tools of teaching profession – the here and now ([https://en.wikipedia.org/wiki/John\\_Dewey](https://en.wikipedia.org/wiki/John_Dewey)). It is this 'here and now' that is rewarded by the school system or system of durable and transposable dispositions (Bourdieu, 1979). However, failure to see student teachers as learners meant that the aim of using practical teaching as laboratory (where the student teachers engage in intellectual activity to deepen their own understanding of subject matter and principles of education) was down played.

### 6.3 What Student Teachers Learn and Perceived Interplay between Theory and Practice

Teacher educators believed that student teachers were learning academic subjects and education courses during the time they were at university. There was evidence that teacher educators believed that student teachers valued subject matter knowledge more than any other kind of teaching knowledge. They believed that student teachers at university learnt subject matter knowledge that was far advanced to the curriculum content that they were going to teach in secondary schools. Such subject matter knowledge was justified on the pretext of personal enrichment, despite being of no immediate relevance. The subject matter knowledge of relevance and immediate use is the school curriculum content knowledge. It could be argued that student teachers were once secondary school students and therefore had learnt the school curriculum content. But then such learning was for purposes of writing O-Level and A-Level examinations, and not for the ultimate goal of being able to teach the same content. Within education courses teacher educators were concerned with “how to help young adults to learn to think differently about teaching and develop a vision that will lead to a sustainable practice ... how to alter the naive assumptions and ill-informed images of teaching that reside in college students who are themselves not yet completely formed adults”, Kennedy (2006, p. 208). Literature is available (e.g. Dewey) to support that student teachers needed both subject matter knowledge and principles of education to be effective teachers.

Further, teacher educators were of the opinion that student teachers went on teaching practice to apply the knowledge and skills they had acquired while at university. Some educators have examined how theory and practice ought to relate, and seem to be agreed that the applicative notion is a simplistic view of the interplay between theory and practice. An alternative view looks at practice as an instrument in making real and vital theoretical instruction, that is, the laboratory view gives the student teacher a better hold upon the educational significance of subject matter he is acquiring and of the science, philosophy and history of education ([https://en.wikipedia.org/wiki/John\\_Dewey](https://en.wikipedia.org/wiki/John_Dewey)).

Our conception of educational theory and its relation to practice regulates our way of educating teachers evident in the amount of time given to practice work, the place at which practical work is introduced, the method of conducting practical work, supervising and assessing practical work ([https://en.wikipedia.org/wiki/John\\_Dewey](https://en.wikipedia.org/wiki/John_Dewey)). Researchers concur that teachers with insights into educational theory are better equipped for teaching pedagogical practice than teachers without such insight.

### 6.4 ‘Mediating’ Tools

The study revealed that participants understood ‘mediating’ tools to be teaching and learning media in the classroom. This notion was not extended to the sort of ‘mediating’ tools a student teacher requires to develop a deeper understanding of educational theory and practice. ‘Mediating’ tools available to student teachers were what they learnt in the different settings. These included subject matter knowledge and pedagogical matter knowledge, educational theory, and other resources they acquired during university-based learning. The concept of tools as educational theory matches Wilson’s (2004) ‘research literature’ tool and is consistent with reflective practice (Schön, 1987, van Manen, 1985, Haggarty and Postlethwaite, 2003).

The participants did not mention tools to use as stimuli for reflective practice. Failure to mention tools needed by student teachers does not imply that these do not exist, rather it could be that teacher educators who were participants in the study did not understand the interview question. These could include scheming, lesson planning and teaching practice guidelines. There is evidence in literature to develop reflective practice using ‘lesson study’ (Tsui & Law, 2007) and planning protocol (Wilson, 2004) as ‘mediating’ tools.

### 6.5 Contradictions

The study revealed that combining supervision and assessment of teaching practice created contradictions between on one hand learning through practice and on the other demonstrating competence to meet certification requirements. Supervision provides *safe-supportive learning* whereas as assessment of teaching practice implies *risky-deep end* where things can go wrong to be awarded a fail grade. The differences in conceptualising school experience as, on one hand, way of integrating the world of work and learning (Schäfer & Wilmot, 2012) and, on the other, as legitimate peripheral participation (Lave & Wenger, 1991) may lead to tension between leaving student teachers on their own and giving them support to access tacit knowledge of experienced teachers who acted as mentors.

The study also revealed that restricting student teachers’ choice of schools close to the university contradicted the noble idea of learning to teach in different schools or contexts. The schools near the university may not provide the full range of variety to meet student teachers’ needs. This finding is consistent with Dewey’s argument that limiting factors exist and inhibit full realisation of the benefits of learning through practice, for example, there isn’t enough time for student teachers to learn all they needed in schools and most schools approximate ordinary conditions to safeguard the best interests of children (Dewey) in classes assigned to student teachers.

### 6.6 Changes in Professional Growth and Improving Teacher Education Practices

From the study participants believed that student teachers showed changes in professional growth. Changes reported were similar to what is found in literature, for example, change in attitudes, knowledge and skills (Guskey, 2000), change in professional competence (Stenhouse, 1975), and changes in student characteristics between entry and exist (Chisaka & Mavhundutse, 2006). Changes occur because as reported in literature there is always a reciprocal regulatory feedback between knowledge growth and (learning to teach) activity (Jonassen & Rohrer-Murphy, 1999; Lave & Wenger, 1991; Fish, 1989).

Some teacher educators believed at times it was difficult to observe changes in student teachers. This finding resonates with literature supporting that pre-service teachers did not adopt new methods of teaching mathematics and science they had learnt at university when they were on placement, perhaps, the reason being failure to contest old practices (Postlethwaite & Haggarty, 2010; Zevenbergen, 2006).

The study revealed that teacher education could be improved by changing duration and timing of teaching practice. This is because some participants believed that school experience “*is wrongly placed at the end of the teacher education programme*” and that in order for student teachers to learn more from practice school experience could be staggered throughout the programme. Evidence is available in literature to support these suggestions emerging from my study, for example, Darling-Hammond (2006, p. 307) reports that “most powerful teacher education programmes required students to spend extensive time in the field throughout the entire programme”.

## 7. Conclusion

From the current study students joined teacher education with mixed range of backgrounds, abilities and work experience. Teacher educators were therefore challenged to put in place strategies that used student teachers’ personal histories as starting points. Student teachers tended to identify themselves with subject specialism. Further, they preferred learning subject matter knowledge to other components of teacher education. Subject matter knowledge is one of many things student teachers need to learn. Therefore, teacher educators face the challenge of motivating student teachers to develop an interest in learning other components like theoretical foundations of education.

From the current study it is evident that student teachers learn in many different settings, one such site being the university and another learning site is the school. Students are confronted by differences in practices, objects and mediating tools. Such differences create contradictions, which need to be resolved, and there is need to understand how student teachers resolve the contradictions and find out what they learn in the process. What student teachers learn in the university can then be viewed as tools and resources that are useful in decision making and reflective practice in the school setting. Teacher education makes a difference. Students’ learning experiences in teacher education led to changes in terms of attitudes, knowledge and skills.

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